CLAIMS

1. A tool analysis device for use on a machine tool comprising a light emitter and a light receiver, the light receiver in use receiving light from the emitter and producing a signal indicative of the amount of light being received, wherein the device further comprises a converter for providing data having a numerical representation of the signal produced by the receiver and comprising also a processor for processing that data and for producing an output when the data conforms to a predetermined condition.

2. A device as claimed in claim 1, wherein the predetermined condition is data representing one or more occurrences of an increase in the light from the emitter received at the receiver, followed by a decrease in that light followed by another increase.

3. A device as claimed in claim 1, wherein the predetermined condition is data representing a succession of decreases in the light from the emitter received at the receiver the minimum values of which conform substantially to a curve of a type expected by the processor.

4. A device as claimed in claim 1, wherein the predetermined condition is data representing the change in the time between occurrences of an increase or decrease in the amount of the light from the emitter received at the receiver.

5. A device as claimed in claim 1, wherein the predetermined condition is data representing an

increase in light from the emitter received at the receiver at a level above that expected from the emitter.

6. A device as claimed in any one of the preceding claims, wherein the processor is a digital signal processor operative to process the data continuously according to an algorithm.

7. A method for processing an analogue signal resulting from light falling on a light receiver of a tool analysis device for use on a machine tool, comprising the steps of:

converting the analogue signal into data having a numerical form which represents the signal; and

processing the data according to an algorithm.

8. A method as claimed in claim 7 wherein the method further includes the step of producing an output signal when instructed by the algorithm when the data conforms to a predetermined condition.

9. A method as claimed in claim 8 wherein the predetermined condition is data representing one or more occurrences of an increase in the light from the emitter received at the receiver, followed by a decrease in that light followed by another increase.

10. A method as claimed in claim 8 wherein the predetermined condition is data representing a succession of decreases in the light from the emitter received at the receiver the minimum values of which conform substantially to a curve of a type expected by the processor.

11. A method as claimed in claim 8 wherein the predetermined condition is data representing the change in the time between occurrences of an increase or decrease in the amount of the light from the emitter received at the receiver.

12. A method as claimed in claim 8 wherein the predetermined condition is data representing an increase in light from the emitter received at the receiver at a level above that expected from the emitter.